Dietary Pattern and Respiratory Diseases in Adults

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Diet is regarded to be a potentially modifiable risk factor for impaired lung function.[1] Evidence suggests that a higher intake of antioxidants, especially vitamin C, may protect against impaired lung function and chronic obstructive pulmonary disease (COPD).[1]

DIETARY PATTERN AND FEV1 OR RESPIRATORY HEALTH

Prudent Dietary Pattern

A "prudent" dietary pattern (characterized by high consumption of fruit, vegetables, oily fish and wholemeal cereals, but by low consumption of white bread, added sugar, full-fat dairy products, chips and processed meat) is described to be strongly positively associated with lung function, particularly forced expiratory volume in 1 second (FEV1), in males and females, and negatively related to COPD in males.[1]

"Meat-dim Sum" Pattern

A "meat-dim sum" pattern (i.e., a diet rich in meats, sodium and refined carbohydrates) may increase the risk of developing cough with phlegm.[2]

Traditional Dietary Pattern

A traditional dietary pattern (characterized by higher intakes of red meat, processed meat, boiled vegetables, added fat, coffee, beer and potato and lower intakes of soy products, low-fat dairy products, tea, breakfast cereal, brown rice, pizza, juice and fruit) is said to be associated with a lower FEV1 and an increased prevalence of COPD.[3]

Cosmopolitan Diet

An increased intake of a cosmopolitan diet (characterized by higher intakes of vegetables, fish, chicken and wine and lower intakes of added fat, added sugar and potato) is reported to be associated with a small increased prevalence of wheeze and asthma.[3]

Mediterranean Diet

Children at age 6.5 years are less likely to have wheeze, atopic wheeze and atopy if their mothers had high compliance with a Mediterranean diet in pregnancy.[3]

Western Dietary Pattern

An increased intake of a Western dietary pattern (higher intakes of refined grains, cured and red meats, desserts and French fries) increases the risk of COPD and the frequency of asthma attacks among asthmatics (at least one attack/week).[3]

THE EFFECT OF NUTRIENTS OR FOODS IN LUNG FUNCTION

- **Sodium:** Dietary sodium has detrimental effects on asthma, airway hyperreactivity and symptoms of bronchitis.[2]
- **Refined foods:** A high intake of refined foods is associated with an accelerated longitudinal decline in FEV1 over 5 years and a small increase in a wheeze.[3]
- **Fast food and quick sugar:** A diet higher in fast food and quick sugar is associated with an increased prevalence of wheeze.[3]
- **Processed meat:** High consumption of processed meat (bacon, gammon, ham, corned beef, spam and luncheon meat, sausage and meat pies) is described to be associated with worse lung function and an increased risk of COPD.[4]
- **Alcohol:** Low-to-moderate alcohol consumption has been associated with improved lung function, while excessive intake has detrimental effects; however, the specific threshold remains undefined.[4]
- **Nonstarch polysaccharide:** Higher nonstarch polysaccharide intake reduces the risk of cough with phlegm and the symptoms of chronic bronchitis.[2]
- **Nuts and wine:** An increased intake of the nuts and wine pattern is associated with a significantly reduced risk of frequent asthma attacks.[3]

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- **Vitamin C:** A higher intake of vitamin C is associated with a lower rate of decline in FEV1.[3]
- **Apple:** Higher apple consumption is associated with a lower rate of decline; however, no significant association exists between intakes of individual nutrients and change in FEV1.[3]
- **Fruit and vegetables:** Fruit and vegetables intake is favorably associated with respiratory health due to the goodness of antioxidant vitamins (C, D, E and β-carotene), minerals (magnesium, calcium, selenium and potassium), dietary fiber and phytochemicals.[4]
- **Fresh fruit:** A reduction in fresh fruit consumption is associated with a higher rate of decline in FEV1 over 7 years.[3]
- **Omega-3 fatty acids:** Omega-3 fatty acids, primarily eicosapentaenoic acid (C20:5) and docosahexaenoic acid (C22:6), found in oily fish and seafood interfere with the body's inflammatory response and may destruct some of the inflammatory mechanisms involved in the physiopathology of COPD, asthma and obstructive lung disease.[4]

In Smokers without Respiratory Disease

- An alcohol-consumption pattern is associated with impaired lung function.[4]
- A Westernized pattern reduces lung function in women.[4]
- A Mediterranean-like pattern appears to be associated with preserved lung function.[4]
- Thus along with focusing on smoking cessation, dietary patterns must also be considered as they protect lung function.[4]

DIETARY PATTERNS AND LUNG CANCER

- Study on dietary patterns and lung cancer in men has shown a modest positive association for a dietary pattern characterized by pork, processed meat and potatoes.[2]
- A weak inverse association between dietary patterns and lung cancer has been described for dietary patterns focusing on vegetable intake.[2]

Knowledge of the beneficial or harmful effects of dietary patterns can be used in public health campaigns on a healthy lifestyle.[3]

TIPS FOR PRESCRIBING NUTRITIONAL SUPPLEMENTS TO YOUR PATIENTS

- Never use oral nutritional supplements (ONS) as first-line treatment.[5]
- Use the 'food first' approach initially, recommending the use of energy and protein-rich foods before prescribing ONS.[5]
- Initiate ONS prescribing when first-line dietary measures/'food first' approach has failed to achieve a positive change towards meeting goals after 1 month.[5]
- Review goals regularly and cease prescribing when goals are achieved. Consider possible interactions of ONS in warfarin-resistant patients.[5]
- Advise patients to take ONS between meals and not before meals or as a meal replacement to maximize their effectiveness and avoid spoiling appetite.[5]
- Prescribe ONS twice daily to be clinically effective and to ensure that calorie and protein intake is sufficient to achieve weight gain. If not food fortification should be used instead.[5]
- Give clear directions for use, e.g., "one to taken twice daily between meals" and not "As directed" as this has been shown to cause patients/carers to use the wrong dose.[5]
- Prescribe a 1-week prescription or starter pack initially to avoid wastage if products are not well accepted due to taste and palatability.[5]
- Avoid prescribing starter packs except for an initial trial, as they are usually more costly.[5]
- Issue monthly prescriptions on acute for 1 to 2 months after the patient has described his/her preferred flavor.[5]
- Avoid prescribing ONS in the repeat medications list without including a short review date to assess treatment goals.[5]
- Provide written information to the patient and/or carer regarding their ONS (supplement drinks) to inform them about their utility and time to stop. This will help manage the patient expectation of the duration of treatment.[5]

USE

- **Powdered shake - as first-line ONS:** Mix it with 200 mL full-fat milk as per manufacturers' instructions.[5]
- **Ready to drink liquid - as second-line ONS:** When a first-line powered ONS is not suitable or the patient is lactose intolerant or has difficulties preparing the powdered shake.[5]
- **Small volume 'compact' style ONS:** When the volume is a problem. It can be mixed with 100 mL of full-fat milk to make a 'compact' style ONS.[5]

- **Juice style drinks - as third-line ONS:** In patients who do not like or are unable to take milky drinks.[5]

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A New Technique to Remove Kidney Stones in Awake Patients

A new technique that combines two ultrasound technologies may provide a way to remove kidney stones from the ureter with little discomfort and without the need for anesthesia, according to a study published in the journal of *Urology*. The specialists assessed the novel technology to address the demand for a method to cure stones without surgery. The stones can then be moved and repositioned to facilitate passage using an ultrasound technique known as ultrasonic propulsion, or they can be broken up using a method known as burst wave lithotripsy (BWL). The study's objective was to evaluate the viability of breaking up stones in awake, nonanesthetized individuals using either BWL or ultrasonic propulsion. The study involved 29 patients. Thirteen patients had propulsion and burst wave lithotripsy, and 16 received propulsion alone. Stone movement occurred in 19 patients. After 2 weeks of follow-up, the results showed that 18 of 21 patients (86%) passed their stones, whose stones were found to be located in the ureter, closer to the bladder. The average time to stone passage in this group was almost 4 days. One patient felt immediate relief when the stone was dislodged from the ureter.

This is the first trial to examine the effects of BWL on shifting or dissolving stones in the ureter.

(*Source: https://m.dailyhunt.in/news/india/english/ani6791725081649696-epaper-anieng/ultrasound+can+move+break+up+kidney+stones+in+awake+patients+study-newsid-n430473908?listname=topicsList&index=23&topicIndex=7&mode=pwa&action=click*)

Impact of Social Disadvantages on the Brain Development of the Fetus

A new study published in the *Proceedings of the National Academy of Sciences* suggests new links between social disadvantages and fetal brain development. In the study, 399 mothers were oversampled for low-income and completed social background measures during pregnancy. Further, the researchers examined 289 brain development diffusion MRI scans of healthy newborns from socially diverse families shortly after birth.

The findings of the analysis revealed that prenatal exposure to measures of social disadvantages, such as education, insurance status, the income-to-needs ratio (INR), neighborhood deprivation and nutrition and psychosocial stressors like depression, stress, life events and racial discrimination, was associated with an altered microstructure of white matter in frontolimbic pathways of the brain. The frontolimbic pathways are the most important part of socio-emotional development. In the longitudinal study, mean diffusivity (MD) and fractional anisotropy (FA) were also measured via probabilistic tractography. The tractography revealed that social disadvantage was independently associated with lower mean diffusivity in the fetal brain. Also, similar results were observed after accounting for maternal medical morbidities and prenatal drug exposure.

(*Source: https://theprint.in/health/study-finds-impact-of-social-disadvantages-on-fetal-brain-development/1164047/*)